

List of All Chemicals

P Amomum compactum (Zingiberaceae)

Common name(s)

Chester Cardamom; Siam Cardamom; Round Cardamom; Java Cardamom

How used

Medicinal

*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

| Chemical | Plant Part | Low PPM | High PPM | StdDev | *Reference |
|-------------|------------|---------|----------|--------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1,8-CINEOLE | Seed | 2880.0 | 16080.0 | 1.88 | Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |

Activities (67)

| | | |
|--------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (-)Chronotropic | 87 nl/ml | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. |
| (-)Inotropic | 87 nl/ml | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. |
| Acaricide | LC100=6 uM | |
| Allelopathic | | |
| Allergenic | | |
| Anesthetic | | |
| Anthelmintic | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antiacetylcholinesterase | IC50=41 ug/ml | |
| Antiallergic | | J. Food Hyg. Soc. Jap. 33(6): 569. |
| Antibacterial | 50 ppm | |
| Antibronchitic | | |
| Anticariogenic | | |
| Anticatarrh | | Martindale's 29th |
| Anticholinesterase | IC50=50-70 | |
| Antifatigue | | |
| Antihalitotic | | American Health, 12(4): 17, 1993. |
| Antiinflammatory | | |
| Antilaryngitic | | |
| Antinociceptive | | |
| Antipharyngitic | | |
| Antiplaque | | |
| Antirheumatic | | |
| Antirhinitic | | |
| Antiseptic | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antisinusitic | | |
| Antispasmodic | | |
| Antistaphylococcic | 50 ppm | |
| Antitussive | | |
| Antiulcer | | |
| CNS-Stimulant | | |
| Candidicide | | |
| Carcinogenic | | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Choleretic | | |
| Convulsant | | |
| Counterirritant | | Martindale's 29th |
| Cytochrome-P450-Inducer | | |
| Decongestant | | |
| Degranulant | 0.3 ul/ml | |
| Dentifrice | | Martindale's 29th |
| Edemagenic inj | | |
| Expectorant | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

| | |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fungicide | |
| Gastroprotective | |
| Gram(+)icide | |
| Gram(-)icide | |
| Hepatotoxic | |
| Herbicide IC50=78 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Hypotensive | |
| Inflammatory inj | |
| Insectifuge | |
| Irritant | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp. |
| Myorelaxant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Nematicide | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Neurotoxic | |
| P450-Inducer | |
| Pediculicide 2.3 x pyrethrin | |
| Perfume | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Rubefacient | Martindale's 29th |
| Secretagogue | |
| Sedative | |
| Spasmogenic | |
| Surfactant | |
| Testosterone-Hydroxylase-Inducer | |
| Transdermal | |
| Trichomonicide | |
| LD100=1,000 ug/ml | |

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|--------------|------|----|-------|------|--------------------------------------------------------------------------------------------------------------------------------------|
| ALPHA-PINENE | Seed | -- | 960.0 | -0.4 | Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|--------------|------|----|-------|------|--------------------------------------------------------------------------------------------------------------------------------------|

Activities (28)

| | |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Allelochemic | |
| Allergenic | |
| Antiacne | |
| Antibacterial | |
| Antifeedant | |
| Antiflu | Economic & Medicinal Plant Research, 5: 195. |
| Antiinflammatory | 500 mg/kg |
| Antipneumonic | |
| Antiseptic | |
| Antispasmodic | |
| Antistaphylococcic | |
| Antiviral | Economic & Medicinal Plant Research, 5: 195. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Coleoptophile | |
| Expectorant | Michael Castleman 1991. The Healing Herbs. Rodale Press, Emmaus, PA 436 pp. |
| FLavor FEMA 15-150 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Herbicide IC50=30 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insecticide 0.82 uM/fly | |
| Insectifuge 50 ppm | |
| Insectiphile | J. Stored. Prod. Res., 22:141, 1986. |
| Irritant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| P450-2B1-Inhibitor IC50=0.087 uM | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Sedative | Lawrence Review of Natural Products, Jun-90. |
| Spasmogenic | |
| Tranquilizer | Lawrence Review of Natural Products, Jun-90. |
| Transdermal | |

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|-----------------|------|----|--------|-------|--------------------------------------------------------------------------------------------------------------------------------------|
| ALPHA-TERPINEOL | Seed | -- | 1200.0 | -0.14 | Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|-----------------|------|----|--------|-------|--------------------------------------------------------------------------------------------------------------------------------------|

Activities (23)

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|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ug/ml (weak activity) | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. |
| Allelopathic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Anti acne | |
| Antibacterial MIC=800-1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Anticancer | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Anticariogenic MIC=800-1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antiinflammatory | |
| Antiproliferant | |
| Antiseptic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Cicatrizant ED50=240 ug/g mus | |
| FLavor FEMA 5-40 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Insecticide 1.29 uM/fly | |
| Interleukin-6-Inhibitor | |
| Mosquitofuge > Deet | |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Sedative | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Termiticide IC100=5 mg/g | |
| Transdermal | |
| Vulnerary ED50=240 ug/g mus | |

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|-------------|------|----|--------|-------|--------------------------------------------------------------------------------------------------------------------------------------|
| BETA-PINENE | Seed | -- | 3840.0 | -0.22 | Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|-------------|------|----|--------|-------|--------------------------------------------------------------------------------------------------------------------------------------|

Activities (13)

| | |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Allergenic | |
| Antiinflammatory | |
| Antiseptic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antispasmodic | |
| Candidicide | |
| FLavor FEMA 15-600 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Herbicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Spasmogenic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Transdermal | |

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|---------|------|----|----|--------------------------------------------------------------------------------------------------------------------------------------|
| BORNEOL | Seed | -- | -- | Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|---------|------|----|----|--------------------------------------------------------------------------------------------------------------------------------------|

Activities (35)

| | |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (-)Chronotropic 29 ug/ml | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. |
| (-)Inotropic 29 ug/ml | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. |
| Allelochemic | |
| Analgesic | |
| Antiacetylcholine | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Antibacterial MIC=125-250 ug/ml | |
| Antibronchitic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antiescherichic MIC=125 ug/ml | |

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|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antiinflammatory | |
| Antiotic | |
| Antipyretic | |
| Antisalmonella MIC=125 ug/ml | |
| Antispasmodic ED50=0.008 mg/ml | |
| Antistaphylococcic MIC=250 ug/ml | |
| Antiyeast MIC=250 ug/ml | |
| CNS-Stimulant | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| CNS-Toxic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Candidicide MIC=250 ug/ml | |
| Choleretic | |
| FLavor FEMA<1 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | |
| Hepatoprotective | |
| Herbicide IC50=470 mM | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Herbicide IC50=470 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Inhalant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Insect-Repellent | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Irritant | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp. |
| Myorelaxant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Sedative | Medline (post 1990 searches filed in my computer) |
| Tranquilizer | |

CAMPHOR Seed -- -- Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.

Activities (41)

| | |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Allelopathic | |
| Analgesic | |
| Anesthetic | |
| Antiacne | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Antidiarrheic 500 ug/ml | Wealth of India. |
| Antidisenteric 500 ug/ml | Wealth of India. |
| Antiemetic 100- 200 mg man orl | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Antifeedant IC50=5,000 ppm diet | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Antifibrotic | Martindale's 28th |
| Antineuragic | Martindale's 28th |
| Antipruritic | Merck 11th Edition |
| Antiseptic | Merck 11th Edition |
| Antispasmodic ED50=0.075 mg/ml | Fitoterapia No.59-1984. |
| CNS-Stimulant | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Carminative | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994. |
| Convulsant | R.J. Huxtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benign Nature. The Risk of Herbal Preparations. <i>Ann. Intern. Med.</i> 117(2):I65-6; Huxtable, R. |
| Cosmetic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Counterirritant | Martindale's 28th |
| Decongestant | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Deliriant | Merck 11th Edition |
| Ecbolic | |
| Emetic | |
| Epileptogenic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |

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|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fungicide ED50=2.7 mM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Herbicide IC50=3.3-180 mM | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Insect-Repellent | |
| Insectifuge | |
| Irritant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Occulorirrant | |
| P450-2B1-Inhibitor IC50=7.89 uM | |
| Pesticide | |
| Respirainhibitor | Merck 11th Edition |
| Respirastimulant | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Rubefacient | |
| Stimulant | R.J. Hixtable (Huxtable, R.J. (as T. Max)). 1992. This and That: The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benign Nature. The Risk of Herbal Preparations. Ann. Intern. Med. 117(2):165-6; Huxtable, R. |
| Transdermal | |
| Verrucolytic | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Vibriocide 500 ug/ml | Wealth of India. |

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|---------|------|----|----|--------------------------------------------------------------------------------------------------------------------------------------|
| CARVONE | Seed | -- | -- | Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|---------|------|----|----|--------------------------------------------------------------------------------------------------------------------------------------|

Activities (19)

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|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Allergenic | |
| Antiacetylcholinesterase IC50=1.4-1.8 mM | |
| Antiproliferative | |
| Antiseptic 1.5 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| CNS-Stimulant | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidstat | |
| Carminative | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994. |
| FLavor FEMA 80-3,000 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungistat | |
| Insecticide | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Sedative | Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Trichomonicide LD100=300 ug/ml | |
| Vermicide | |

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|---------------|------|----|----|--------------------------------------------------------------------------------------------------------------------------------------|
| CARYOPHYLLENE | Seed | -- | -- | Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|---------------|------|----|----|--------------------------------------------------------------------------------------------------------------------------------------|

Activities (31)

| | |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aldose-Reductase-Inhibitor | |
| Allergenic | |
| Analgesic | Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp. |
| Anti acne | |
| Antiasthmatic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antibacterial | |
| Anticariogenic MIC=>1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antidermatitic | |
| Antiedemic | Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)2). Chem. Pharm. Bull. 38(8): 2283-2284, 1990. |
| Antifeedant 500 ppm | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Antiinflammatory IC50=100 uM | Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)2). Chem. Pharm. Bull. 38(8): 2283-2284, 1990. |
| Antileishmanic | |

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|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antiproliferant | |
| Antispasmodic | |
| Antistaphylococcic | |
| Antistreptococcic | |
| Antitumor | Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove (<i>Eugenia caryophyllata</i>) As Potential Anticarcinogenic Agents. <i>Journal of Natural Products</i> 55(7): 999-1003, 1992. |
| Antiulcer | Taylor, Leslie. 2005. <i>The Healing Power of Rainforest Herbs</i> . SquareOne Publisher, Garden City Park, NY. 519 pp. |
| Candidicide | |
| FLavor FEMA 20-200 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | |
| Gastroprotective | Taylor, Leslie. 2005. <i>The Healing Power of Rainforest Herbs</i> . SquareOne Publisher, Garden City Park, NY. 519 pp. |
| Insectifuge | |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253. |
| Larvicide | |
| Mosquitocide | |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Sedative | |
| Termitifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |

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|-----------|------|----|----|----------------------------------------------------------------------------------------------------------------------------------------------|
| D-BORNEOL | Seed | -- | -- | Duke, J. A. and duCellier, J. L. 1993. <i>CRC Handbook of Alternative Cash Crops</i> . CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|-----------|------|----|----|----------------------------------------------------------------------------------------------------------------------------------------------|

Activities (4)

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|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Convulsant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253. |
| Emetic | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253. |
| Perfume | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253. |

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|-----------|------|----|----|----------------------------------------------------------------------------------------------------------------------------------------------|
| D-CAMPHOR | Seed | -- | -- | Duke, J. A. and duCellier, J. L. 1993. <i>CRC Handbook of Alternative Cash Crops</i> . CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|-----------|------|----|----|----------------------------------------------------------------------------------------------------------------------------------------------|

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|----|------|----|---------|-------|----------------------------------------------------------------------------------------------------------------------------------------------|
| EO | Seed | -- | 24000.0 | -0.25 | Duke, J. A. and duCellier, J. L. 1993. <i>CRC Handbook of Alternative Cash Crops</i> . CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|----|------|----|---------|-------|----------------------------------------------------------------------------------------------------------------------------------------------|

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|-----------------|------|----|----|----------------------------------------------------------------------------------------------------------------------------------------------|
| GAMMA-TERPINEOL | Seed | -- | -- | Duke, J. A. and duCellier, J. L. 1993. <i>CRC Handbook of Alternative Cash Crops</i> . CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|-----------------|------|----|----|----------------------------------------------------------------------------------------------------------------------------------------------|

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|----------|------|----|-------|----------------------------------------------------------------------------------------------------------------------------------------------|
| HUMULENE | Seed | -- | 720.0 | Duke, J. A. and duCellier, J. L. 1993. <i>CRC Handbook of Alternative Cash Crops</i> . CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|----------|------|----|-------|----------------------------------------------------------------------------------------------------------------------------------------------|

Activities (2)

| | |
|------------------------------|--|
| Antimalarial IC50=86 ug/ml | |
| Antiplasmodial IC50=86 ug/ml | |

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|---------------------|------|----|----|----------------------------------------------------------------------------------------------------------------------------------------------|
| HUMULENE-EPOXIDE-II | Seed | -- | -- | Duke, J. A. and duCellier, J. L. 1993. <i>CRC Handbook of Alternative Cash Crops</i> . CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|---------------------|------|----|----|----------------------------------------------------------------------------------------------------------------------------------------------|

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|----------|------|----|----|----------------------------------------------------------------------------------------------------------------------------------------------|
| LIMONENE | Seed | -- | -- | Duke, J. A. and duCellier, J. L. 1993. <i>CRC Handbook of Alternative Cash Crops</i> . CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50. |
|----------|------|----|----|----------------------------------------------------------------------------------------------------------------------------------------------|

Activities (60)

| | | |
|-----------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------|
| AChE-Inhibitor | | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. & Physiol.</i> , 23, 1985, 383-8. |
| Acaricide LC100=8 uM | | |
| Allelochemic | | |
| Allergenic 1/20th carene | | |
| Antiacetylcholinesterase IC22-26=1.2 mM | | |
| Antiadrenomimetic | | |
| Antialzheimeran? | | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. & Physiol.</i> , 23, 1985, 383-8. |
| Antiasthmatic | | |
| Antibacterial | | Revista Itiliana Eppos, 12: 5, 1994. |
| Anticancer | | |
| Antiesophagitic | | |
| Antifeedant | | |
| Antiflu | | Economic & Medicinal Plant Research, 5: 195. |
| Antiinflammatory | | |

| | | | |
|-----------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Antilymphominc | | | |
| Antimetastatic (Stomach) | | | |
| Antimutagenic | | Economic & Medicinal Plant Research, 6: 235. | |
| Antiobesity | | | |
| Antiseptic | | | |
| Antispasmodic ED50=0.197 mg/ml | | Fitoterapia No.59-1984. | |
| Antitumor | | | |
| Antitumor (Breast) | | | |
| Antitumor (Colon) | | | |
| Antitumor (Pancreas) | | | |
| Antitumor (Prostate) | | | |
| Antitumor (Stomach) | | | |
| Antiviral | | | |
| Apoptotic | | | |
| Bronchoprotectant | | | |
| Cancer-Preventive | | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | |
| Candidstat | | | |
| Chemopreventive | | | |
| Cholesterolytic | | | |
| Detoxicant | | | |
| Enterococontractant | | J. Aromatherapy 4: 22. | |
| Expectorant | | | |
| FLavor | | | |
| Fungiphilic | | J. Agric. Food Chem. 43: 2283. | |
| Fungistat | | | |
| GST-Inducer | | | |
| Herbicide IC50=45 uM | | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. | |
| Histaminic | | | |
| Immunomodulator | | | |
| Insecticide 0.37 uM/fly | | | |
| Insectifuge | | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. | |
| Interleukin-6-Inhibitor | | | |
| Irritant | | | |
| Lipolytic | | | |
| Myorelaxant 50 mg/kg | | | |
| NO-Genic | | | |
| Nematicide IC=100 ug/ml | | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. | |
| Ornithine-Decarboxylase-Inhibitor ~750 mg/kg (diet) | | | |
| Ozone-Scavenger | | | |
| P450-Inducer | | | |
| Peristaltic | | | |
| Pesticide | | | |
| Photosensitizer | | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp. | |
| Sedative ED=1-32 mg/kg | | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) | |
| Transdermal | | | |

MYRTENAL Seed -- -- Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.

Activities (5)

| | |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antimalarial IC50=5-50 ug/ml | Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp. |
| Antiplasmodial IC50=5-50 ug/ml | Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp. |
| Herbicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |

P-CYMENE Seed -- -- Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.

Activities (16)

| | |
|--------------------------|-------------------|
| Analgesic | Martindale's 28th |
| Antiacetylcholinesterase | |
| IC40=1.2 mM | |
| Antibacillary | |
| Antibacterial | |

| | |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antirheumatalgic | Martindale's 28th |
| Antiviral | |
| FLavor FEMA 12-250 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Herbicide IC50=50 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Laxative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Pesticide | |
| Sedative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Trichomonicide | |
| LD100=50 ug/ml | |

TERPINEN-4-OL Seed -- -- Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.

Activities (23)

| | |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Allelopathic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacetylcholinesterase IC21-24=1.2 mM | |
| Antiacne | |
| Antiallergic | |
| Antiasthmatic | Chin. J. Tuber. Respir. Dis., 4:203, 1982. |
| Antibacterial | |
| Antioxidant | |
| Antiseptic | Flav. & Frag. J. 9: 129. |
| Antispasmodic | |
| Antitussive | Chin. J. Tuber. Respir. Dis. |
| Antiulcer | |
| Bacteriostatic | Chin. J. Tuber. Respir. Dis. |
| Diuretic 0.1 ml/rat | |
| Fungicide | |
| Herbicide IC50=200 mM | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Herbicide IC50=22 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | |
| Irritant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Pesticide | |
| Renoirritant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Spermicide ED100=0.015 | |
| Vulnerary | Lawrence Review of Natural Products, Jan-91. |